IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-40 (cancelled)

41. (new) A method for identifying and quantifying tumour-associated peptides, the method comprising the following steps:

a) providing a sample from tumorous tissue and a sample from a corresponding healthy tissue, wherein both samples have identical amounts per weight or identical cellular counts;

b) isolating peptides from the tumorous tissue sample;

c) isolating peptides from the corresponding healthy tissue sample;

d) chemically modifying the peptides obtained in step (b) with a chemical group that contains a first stable isotope of an element from the periodic system of the elements;

e) chemically modifying the peptides obtained in step (c) with a chemical group that contains a second stable isotope of the element from the periodic system of the elements used in step d), wherein the first and second stable isotopes are different isotopes of the same element from the periodic system of elements;

f) mixing of the chemically modified peptides obtained from steps (d) and (e);

g) separating the peptides obtained from step f) by a chromatographic method;

h) determining the amino acid sequence of the peptides;

i) determining the relative ratio of the amount of peptides having identical amino acid sequences isolated from both the tumor and corresponding healthy tissue samples, using the difference of the first and second stable isotopes of the same element to determine the relative ratio; and

j) using the relative ratio determination in step (i) to identify tumor associated peptides.

42. (new) The method according to claim 41 wherein deuterium (^{2}D) and regular hydrogen (^{1}H) are used as the first and second stable isotopes.

43. (new) The method of claim 42 wherein the chemical modification comprises gaunidination of the ε-amino group of a lysine residue in the peptides with *O*-methyl-iso-urea-hemisulfate and nicotination of the α-amino group of the peptides with nicotinyl-N-hydroxy-succinimide-ester (NicNHs).

44. (new) The method of claim 43, wherein the nicotination is either $^{2}D_{3}$- or $^{1}H_{3}$-nicotination.

45. (new) The method of claim 43, further comprising treating of the modified peptids with hydroxylamine.

46. (new) The method according claim 41, wherein in the chromatographic method comprises HPLC.

47. (new) The method according to claim 41, wherein steps (h) and (i) are performed by mass spectrometric analysis.

48. The method of claim 41 wherein isolating the peptides from the tumor tissue and the healthy tissue is performed with a MHC antibody; and further comprising testing reactivity of T lymphocytes against the tumor associated peptides to identify immunogenic tumor associated peptides, and wherein the peptide has the ability to bind to a molecule of the human major histocompatibility complex (MHC) class-I.

49. (new) The method according to claim 48, wherein the testing of the reactivity takes place by the activation of peripheral T-lymphocytes by reconstituted complexes from antigen-presenting molecules and the peptides.

50. (new) A tumor associated immunogenic peptide identified by the method of claim 49, wherein the peptide has an amino acid sequence that is selected from the group consisting of SEQ ID NO: 1 to 36.

51. (new) A pharmaceutical composition comprising at least one peptide of claim 50 and a pharmaceutically acceptable carrier.

52. (new) The composition of claim 51 further comprising an adjuvant.

53. (new) A nucleic acid molecule that encodes a peptide of claim 50.

54. (new) A vector comprising the nucleic acid molecule of claim 53.

55. (new) A cell that is genetically modified with a nucleic acid molecule of claim 53.

56. (new) A method for producing a vaccine comprising identifying an immunogenic tumor associated peptide by the method of claim 49;

producing the identified peptides and

formulating the produced peptide into the vaccine.

57. (new) A diagnostic method, wherein the presence and/or the amount ratio of a peptide determined by the method of claim 41 is used as a diagnostic marker.

58. (new) A method for treatment of a pathological condition, wherein an immune response against a protein of interest is triggered, by administering the pharmaceutical composition of claim 51.

59. (new) A electronic storage medium containing the amino acid sequence of at least one peptide identified by the method of claim 41.